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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/563,541	12/24/2005	Sang Seon Nam	026849.077166	8686

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OBER/KALER  
c/o Royal W. Craig  
Suite 800  
120 East Baltimore Street  
Baltimore, MD 21202

EXAMINER
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BELL, BRUCE F

ART UNIT	PAPER NUMBER
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1795

MAIL DATE	DELIVERY MODE
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09/30/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/563,541	<b>Applicant(s)</b> NAM ET AL.	
	<b>Examiner</b> Bruce F. Bell	<b>Art Unit</b> 1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-5 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 December 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____.                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date ____.  | 6) <input type="checkbox"/> Other: ____.                          |

### **DETAILED ACTION**

With regards to instant claims 2-5, it is unclear as to whether these claims exist in the application anymore, since the examiner has not requested an election restriction and applicant has not cancelled these instant claims but instead has withdrawn them which is not permitted unless an election restriction has been imposed. Therefore, the examiner has construed these claims as not having been cancelled and the office action below will address these limitations as set forth in these dependent claims. Should applicant have intended to cancel these claims, they must positively recite that these claims are cancelled or they will be considered in future office actions.

#### ***Claim Rejections - 35 USC § 112***

1. Claim 5 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 5 is vague and indefinite with respect to the trademark "TEFLON". Trademarks are not permitted in claims due to their formulations being capable of change at the whim of the manufacturer. The examiner suggest that applicant use the generic term for TEFLON, which is polytetrafluoroethylene.

#### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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2. Claims 1-4 are rejected under 35 U.S.C. 102(102(b)) as being anticipated by Plowman et al (4732660).

Plow man disclose an ion exchange membrane electrolyzer having a gas diffusion cathode, a current distributor, an anode supported by a wall of the electrolytic cell housing and a spacing means separating the current distributor that is in contact with the gas diffusion cathode from the ion exchange membrane. See abstract. The electrolytic cell is composed of an anodic compartment and a cathodic compartment that is separated by an ion exchange membrane. The anode and cathode of the cell are separated by a spacing means and a current distributor which is in contact with a gas diffusion cathode, the opposite face of which is exposed to a gas such as air or oxygen. The anode can be an expanded or perforated metal anode of an electrocatalytically active coating such as a mixture of platinum group metals oxides. See col.. 2, lines 31-48. A cation exchange membrane is positioned between the anode and cathode. See col. 3, lines 1-2. The electrocatalytically active coating is one or more platinum group metals or alloys of these metals and/or oxides thereof. See col. 3, lines 34-48. The cathode can be made of carbon as the carrier and coated with a platinum group metal. See col. 3, lines 49-66. The cathode is laminated to a metal mesh current distributor that is 20 x 20 x 0.010 inch. The metal mesh current distributor is that of a metal of steel, nickel, platinum group metals, silver or silver coated steels and valve metals. See col. 4, lines 51-59. The spacing means which separates the membrane and the current distributor is typically a non-conducting or conducting material. See col. 4, lines 64-68. The spacer used may be a current collector of nickel or silver plated nickel with one side

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coated with an inert polymer such as Teflon, PVC or polyethylene. See col. 5, lines 1-14. Flexible plastic sheets can be used rather than structurally rigid materials such as steel or polymer composites to provide rigid support against internal cell pressures. See col. 5, lines 15-34. Nafion known as a perfluorosulfonic acid is used as the ion exchange membrane between the anode and cathode. See col. 5, lines 40-68. Figures 1 and 2 show the construction of the cell wherein a current collector 11 is disposed on the inside portion of the cathode so as the current collector faces the ion exchange membrane in one side of the membrane and the anode faces the ion exchange membrane on the opposite side of the membrane. Spacer rods maintain the catholyte space. See col. 6, lines 13-64. The anode assembly has a supported anode, an ion exchange membrane and a cell frame component. The anode is a metal oxide catalyst coated titanium mesh and has an internal support of metal rods or flat metal strips. See col. 7, lines 15-25. The spacer for the anolyte compartment can be a non-conductive material of a plastic with a distinct current collector. See col. 7, lines 39-52.

The prior art of Plowman et al anticipates the applicants instant invention as shown by way of the disclosure above. It appears that since the prior art invention may use platinum electrodes with an ion exchange membrane and has a current collector on the surface that faces both the ion exchange membrane and the cathode, that the instant claims as presented have been met. The examiner construes such current collector to be that of an auxiliary electrode since the materials and metal mesh are used and since this current collector inherently meet the features as set forth in applicants instant claim. Since the materials for the anode and cathode of Plowman are

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the same as in applicants instant specification as well as are the ion exchange membrane and the current collector, that the instant invention as set forth would inherently be met by the prior art device of Plowman. Even though the prior art of Plowman recites that the cell is especially suited for generating halogen by electrolyzing aqueous halide, does not preclude this device from being utilized for electrolyzing water, since the apparatus features as instantly claimed are the same and the output would be dependent on the input of materials placed into such cell. Since materials which are not sealed into electrolytic cells are not given patentable weight, it appears that the cell as instantly recited, has been met by the features set forth in the Plowman et al patent. Therefore, the prior art of Plowman et al anticipates the applicants claims as shown above.

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Plowman et al (4732660).

Plowman et al is as disclosed above with respect to the 35 USC 102(b) rejection.

Plowman et al does not disclose the space to be teflon.

The subject matter as a whole would have been obvious to one of ordinary skill in the art at the time the instant invention was made because even though teflon is not

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taught for the anode side spacer, but instead teaches that a metal rod with a coating of non-conductive plastic is used, and further shows that teflon can be used on the cathode side, it would be within the ability of the person having ordinary skill in the art to realize that if teflon which is a plastic can be used to coat the metal rod on one side of the cell, than it would be obvious to be able to use teflon as a coating on the opposite side of the cell, since plastic is disclosed to be used and teflon is considered to be a type of plastic coating. Therefore, the prior art of Plowman et al renders the applicants instant invention as obvious for the reasons set forth above.

### ***Response to Arguments***

5. Applicant's arguments, see amendment, filed 8/11/08, with respect to the rejection(s) of claim(s) 1, 3, 4 under 35 USC 102(b) and claims 2 and 5 under 35 USC 103 have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Plowman et al (4732660).

### ***Conclusion***

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not

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mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Bruce F. Bell whose telephone number is 571-272-1296. The examiner can normally be reached on Monday-Friday 6:30 AM - 3:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on 571 272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

BFB  
September 26, 2008

/Bruce F. Bell/  
Primary Examiner, Art Unit 1795



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